

Application number 10/796,500
Amendment dated April 17, 2006
Reply to office action of October 17, 2005

PATENT

REMARKS/ARGUMENTS

Claims 1-6, 8, 10-12, 14, and 16-19 will be pending after entry of this amendment.

Claims 1, 2, 4, 5, 10-12, 14, and 16-19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Alexander et al., United States patent number 6,087,873 (Alexander) and by Lewicki et al., United States patent number 5,528,185 (Lewicki). Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander or Lewicki. Reconsideration of these rejections and allowance of the pending claims in light of these remarks is respectfully requested.

Claim 1

Claim 1 stands rejected under 35 USC 102(b) as being anticipated by Alexander and Lewicki. But neither of these references teach each and every element of this claim. For example, claim 1 recites "wherein the multiplexer causes the hysteretic amplifier to have positive hysteresis when the hysteretic select signal is in a first state, and the multiplexer causes the hysteretic amplifier to have negative hysteresis when the hysteretic select signal is in a second state." Neither of the cited references provide this feature.

The pending office action states that this feature is inherent in the operation of the circuitry shown in Alexander. (See pending office action, page 3, lines 3-5.)

But the comparator in Alexander does not have a positive hysteresis when the hysteretic signal is in a first state and a negative hysteresis when the hysteretic signal is in a second state as required by the claim. Rather, the hysteresis in Alexander is always positive, that is, the hysteresis is a voltage which needs to be exceeded after the inputs reach a common voltage before the comparator output can switch. For example, Alexander, at column 3, lines 32-36 states "[t]hus, the hysteresis offset voltage...will have to be overcome by the input signal voltages being compared at the differential inputs of the comparator." If the hysteresis in Alexander were to be negative, the comparator output would switch before the inputs reach a common voltage. Alexander does not teach this.

It is important to note that providing a negative and positive hysteresis is not the same as having a negative or positive magnitude for a hysteresis voltage. In Alexander, when

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the output is in a first state, the input hysteresis voltage is positive, while when the output is in a second state, the input hysteresis voltage is negative. At both times however, the hysteresis itself is positive. For example, Alexander at column 3, lines 52-55 states “[f]or the circuit described, the magnitude of the hysteresis voltage offset will be positive if the previous output decision was high and negative if the previous decision was low.” (emphasis added) The sign associated with the magnitude of the hysteresis thus changes depending on the logic state of the output, though the hysteresis itself does not change from positive to negative in the circuit taught by Alexander.

The pending office action also states that this feature is inherent in Lewicki. But, as with Alexander, the hysteresis in the comparator taught by Lewicki is always positive. For example, Lewicki at column 4, lines 28-31 states “[i]t is desirable to add hysteresis to the comparator, so that once it has settled on an output Qout, in order to switch states so as to detect the logically opposite output state, the differential input must change by an [a]mount greater than $2 \cdot V_{\text{hysteresis}}$.” (emphasis added) If the hysteresis in Lewicki were to be negative, the differential input would have to change by an amount less than $2 \cdot V_{\text{hysteresis}}$. Lewicki does not teach this.

Accordingly, neither Alexander nor Lewicki teach a positive hysteresis when the hysteretic signal is in a first state and a negative hysteresis when the hysteretic signal is in a second state as required by the claim.

For at least these reasons, claim 1 should be allowed.

Other claims:

Claims 10 and 16 should be allowed for similar reasons as claim 1. The other claims depend on one of these claims and should be allowed for at least the same reasons and for the additional limitations they recite.

CONCLUSION

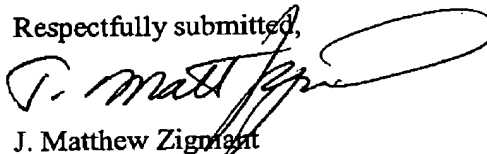
In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal notice of allowance at an early date is respectfully requested.

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If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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